
On the Organization of *geistige Arbeit*: Historical Reflections on Die Brücke

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ABSTRACT

In this essay I offer a theoretical argument for why Die Brücke's commercial interests should not be seen as an addendum to its scholarly or scientific pursuits. More specifically, the story of Die Brücke is a story about the intertwining of the scientific and the commercial, of theoretical and applied forms of knowledge in late nineteenth and early twentieth-century culture. Die Brücke's role as an "organizer of organizers" will be offered as a case study in this analysis, which also sheds new light on the history of standardization. Like a number of my colleagues, I suggest that Die Brücke deserves comparison with Paul Otlet's Palais Mondial, which similarly set out to regulate the organization of human knowledge (see, e.g., Hapke, 1999, p. 143; Krajewski, 2006, p. 111). At the same time—and here is my more critical concern—I also suggest that its efforts anticipate those of standards-issuing organizations such as Waldemar Hellmich's Deutsches Institut für Normung (DIN). Both Die Brücke and DIN ultimately used paper standards to enforce the use of standards at large. They also shared common strategies for gaining a foothold in Germany's nascent "office systems" industry.

The utopian collective that this essay examines devoted itself to the quantification and rationalization of thought. Established in Munich in 1911 and known as Die Brücke (not to be confused with the group of Expressionist artists bearing the same name), it was founded by three individuals, the merchant and advertising specialist Karl Wilhelm Bührer (1861–1917), the chemist and writer Adolf Saager (1879–1949), and the Nobel Prize-winning chemist Wilhelm Ostwald (1853–1932). Die Brücke suffered from mismanagement from the beginning, and it existed for only

three years. However, its importance to the history of the organization of knowledge cannot be overstated. It aimed to duplicate for the library what Henry Ford had achieved for the factory, and it developed a number of novel advertising strategies for the purpose of helping it achieve that end.

For example, Die Brücke enlisted the talents of an accomplished illustrator and set designer (Emil Pirchan) in order to establish a distinctive graphic identity. Its circle of associates included Peter Behrens, who helped invent modern branding through his work for AEG (Allgemeine-Elektricitäts-Gesellschaft). It also made prominent use of the corporate logo (a novel invention at the time). It utilized tangible symbols (e.g., bridges and islands) in order to streamline its message. It repeated its claims often—and often even in the same text—to lodge its claims in the reader's imagination. Die Brücke included bold-printed key words in virtually every one of its published documents (this was to facilitate the skimming of text). It also leveraged its ties to famous figures (e.g., Wilhelm Ostwald) to help it win trust and support. Its “products” (e.g., the *Weltformat*, or “World Format”) were given inclusive-sounding names in order to appeal to a global audience. It deliberately made use of leaflets, posters, brochures, and other media more commonly associated with advertising literature in an effort to win adherents.

As Thomas Hapke has noted, K. W. Bührer was probably the person most responsible for developing Die Brücke's visual identity. Prior to co-founding Die Brücke, he had been a key figure in the Mittelschweizerische Geographisch-Commercielle Gesellschaft, which sought to “mediate between manufacturers and consumers with a view to promoting trade and exports” (Hapke, 2008, p. 310). Bührer later established the Internationale Monogesellschaft, which created “little cards or leaflets in a standardized format and may best be described as advertising picture-cards” (Hapke, 2008, p. 312). (They were also known as “Monos,” which I discuss in greater detail below.) Bührer made it his business to build relationships between Die Brücke and commercial advertising groups, and he had a lasting impact on its efforts to connect with scientists as well:

The Bridge published a number of leaflets about advertising. One by Saager (1912), “The Cultural Mission of Advertising,” expressed his idea of awakening the delight of collecting as a means to keep in mind what was being advertised. This echoed the activities of the *Monogesellschaft* and reflects the complex contemporary linguistic relationship between communication and advertising. In 1912 the Berlin Association for Friends of Posters joined the Bridge as an associate member. This also suggested the continuing connection of the Bridge to advertising. But other work of the Bridge reflected its interest in efficiency and standardization, about which it issued a number of leaflets. “Lack of Space and the World Format,” for example, described how a large number of volumes could be shelved in relatively small rooms if the formats were standardized. (Hapke, 2008, p. 316)

Elaborating Die Brücke's engagement with the advertising industry will not be the primary focus of this essay. Rather, I would like to explore the links between its commercial interests and scientific pursuits. For the story of Die Brücke is, I believe, a tale about the intertwining of theoretical and applied forms of knowledge in late nineteenth and early twentieth-century culture. Like a number of my colleagues, I suggest that Die Brücke deserves comparison with Paul Otlet's Palais Mondial, which similarly set out to regulate the organization of human knowledge (see, e.g., Hapke, 1999, p. 143). Otlet was Die Brücke's "honorary president" (Bührer and Saager, 1911, pp. vii). He also supported its core initiatives. At the same time, I also hold, following Markus Krajewski, that its achievements need to be compared with those of standards-issuing organizations such as Waldemar Hellmich's Deutsches Institut für Normung (DIN) (Krajewski, 2006, pp. 120). Both Die Brücke and DIN ultimately used paper standards to enforce the use of standards at large. They both conceptualized scientific knowledge as a proprietary good. They were both devoted to the principle that one document ought to express one thought, that the leaflet—and not the book—ought to serve as the preeminent "currency" of human knowledge.

DIE BRÜCKE: THEORIES AND IDEALS

Die Brücke's goal was the complete organization and collectivization of *geistige Arbeit*. This was an unusual program to say the least, and the concepts and discourses associated with it merit special attention. Indeed, for much of modern history, *geistig* has been used to describe something that is inherently other-worldly or metaphysical. In the Middle Ages it was regarded as a synonym for the Latin word for "spirit" or "ghost." Starting in the seventeenth century, it was often also used to describe phenomena that were ephemeral or abstract (Pfeifer, 1993). In the context of Die Brücke's writings, by contrast, *geistig* can be rendered only as "intellectual," cognitive, "immaterial," or "mental"; that is to say, in terms of language that has its basis in psychology, economics, or physiology (rather than metaphysics or philosophy). More importantly still, the term *geistige Arbeit* was used to describe a particular kind of mental *work*, namely the type that could be *measured*. As Anson Rabinbach has noted (1990), *Arbeit* was an activity that nineteenth-century science believed could be quantified. Moreover, "energetics" was the name given to the discipline that devoted itself to fostering the scientific study of work. Advocates of energetics (such as Wilhelm Ostwald) treated the power expended by humans and machines as interchangeable (Rabinbach, 1990, pp. 181–182). They also hoped to maximize productivity. As Ostwald notes, "Unregulated energy dispersion is tantamount to energy waste, and so the energetic imperative presents itself against the [Kantian] categorical imperative almost automatically: do not waste (*vergeude*) energy, make use (*verwerte*) of it!" (Ostwald, 1927, p. 312).

Ostwald used the phrase *geistige Arbeit* to describe a world in which mental and physical work could be treated as complementary, studied scientifically, and rationalized in ways that conserved time and energy. Bühner and Saager fundamentally embraced this usage, as the following passage from *Die Organisierung der geistigen Arbeit durch "Die Brücke"* (1911)—Die Brücke's founding "manifesto"—illustrates:

The tendency that can be observed . . . is possibly the sharp separation of immaterial from mechanical labor for the purpose of energy conservation and the liberation of man from a portion of his work that can just as well be carried out by a spiritless machine. The ideal outcome of this development is to relieve man of all work that cannot be described as *geistige Arbeit*. (Bühner and Saager, 1911, p. 35)¹

According to Bühner and Saager, specialization enables the conservation of energy (*Energieersparnis* is the term they use). It improves productivity and reduces costs. It also narrows the scope of the responsibilities placed on the shoulders of a single worker. They state that the way to improve the effectiveness of the *geistige Arbeiter* is to mechanize aspects of his or her work that are not, strictly speaking, *geistig* or mental. They also assert that a new class of specialists is needed that can organize the organizers of knowledge. Die Brücke's goal was precisely to become this "organizer of the organizers" (Ostwald, 1927, p. 300), and it devoted itself to realizing this aim:

The task of an Institute for the Organization of *geistigen Arbeit* (which, as we noted in the introduction, ought to carry the name Die Brücke) will be twofold:

- To organize retroactively all completed *geistige Arbeit* that has not to date paid attention to the total organization; that is, to prepare a comprehensive overview concerning the results of this work, so that it can in future undertakings be made more useful without the use of any effort or energy.
- To get future work on track so that it can organize itself according to its own possibilities, and in particular with reference to both its form and content.

Should the Institute succeed in these two tasks, *geistige Arbeit* will transform itself into an organism. (Bühner and Saager, 1911, p. 41)

Particularly important in this passage is Bühner and Saager's emphasis on "the results" of *geistige Arbeit*. What interested the members of Die Brücke were the things that *geistige Arbeit* produced, be they books or maps, documents or postcards. The way to properly organize these artifacts, they believed, is by arranging them in a manner that is useful; nothing should be wasted (*restlos*) such that "thoughts are exhausted as much as possible and shine . . . into every corner" (Bühner and Saager, 1911, p. 19). Following the energetic imperative, they felt that all material should be presented in a fashion that does not unduly tax the attention of the listener or reader:

Our goal for *geistige Arbeit* will be . . . that *geistige Arbeit* loses none of its intelligibility and that . . . its inner character is not damaged by its necessarily externalized materialize form; that *geistige Arbeit* will be utilized without loss of materials or power. (p. 92)

As Bühner and Saager note above, any ideal system of communication will “utilize” *geistige Arbeit* without wasting materials or power. It will possess “universal intelligibility” and will not in any way distort the message it transmits. It will document words and pictures as well as physical artifacts. Finally, it will not rely on books or conventional libraries; for books, Bühner and Saager maintained, require the use of excessive energy in carrying out the tasks of cataloging and housing information. Because most countries lack uniform systems for documenting knowledge, bibliographers have been left to their own devices to invent conventions in their absence. Because space is lost to books that are formatted in larger sizes than necessary, libraries are limited in the number of volumes they can house. Moreover, Bühner and Saager argue, the overabundance of non-standard (and especially Gothic) typefaces compromises the speed with which the reader can absorb information (an insight that later becomes crucial to the development of *Neue Typographie*). In effect, our unnecessary reliance on the book has simply hampered the quick transmission of knowledge. The book may have symbolized progress and enlightenment learning to the liberal reformers of the nineteenth century, but to Die Brücke it had become simply an emblem of excess and decay. For Bühner and Saager, books artificially separate the thoughts of one author from another and prioritize the desires of the writer over those of the reader. Books reinforce an understanding of *geistige Arbeit* that is fragmented and hermetic:

Every person has in his library books that he keeps on account of one twentieth of its contents, perhaps even because of one page. The parts that he likes he is afraid to take out, already because he fears that he will never find it again. (Bühner and Saager, 1911, p. 135)

DIE BRÜCKE IN PRACTICE

In *Die Organisation der geistigen Arbeit* durch “Die Brücke,” Bühner and Saager introduce an alternative to book-based forms of communication. They term it the “Mono System” (“Mono” being short for “Monographic”). The Mono System takes many of its cues from the world of mass advertising. It emphasizes directness and accessibility. It focuses on the desires of the consumer (i.e., the reader) and not just the producer (i.e., the author). It privileges the ephemeral over the monumental, e.g., the brochure and leaflet over the book. It also aims to challenge the prestige that the written word enjoys in Western culture by a focus on the documentation of visual material and not just text. In a 1906 brochure, Bühner stresses the Mono’s benefits vis-à-vis the world of marketing: it offers us a means by

which to sell and sort products and services in a time- and space-saving manner (Bührer, 1906, pp. 7–8). Later, as part of Die Brücke's more general agenda, Bührer and Saager also emphasize the relevance of the Mono System to the scientific domain. Each Mono, they observe, should contain one thought; for example, one Mono might be dedicated to "a particular poem of a particular poet on the subject of wine" (Bührer and Saager, 1911, p. 115). They suggest that every known body of research should be individuated and quantified using a uniform set of conventions suitable for the Mono System. Monos should rely on consistent and non-arbitrary graphic and visual standards. They should be arranged according to the Dewey Decimal Classification system. They should be printed on standardized sheets of paper.

Die Brücke believed that the development of universal paper standards was particularly critical to the Mono System's success, and its members devoted considerable energy to deriving a set of technical guidelines appropriate to the task. Their efforts in this domain culminated in the development of the World Format. The World Format's rules were, first that doubling or halving the width or length of a given format must yield the dimensions of another. This requirement, Ostwald notes in a 1911 essay, is dictated by "the nature of the material, namely paper, since under this assumption an efficient distribution of large sheets in small [paper] sizes" can be achieved (pp. 7–8). Second, the width-to-height ratio of all formats should be $1:\sqrt{2}$ ($= 1:1.414 = 0.707/1$). This preserves uniform proportions at all scales. Third, the smallest paper format ought to have a width of exactly one centimeter in that "this has already been accepted as the global unit of length" (p. 9).

Die Brücke believed that to control paper was to control culture and by extension the world's entire social fabric: "Everyday paper is, with writing and other sign systems," Ostwald states, "the technical foundation for all culture, that is, of all intellectual capital" (1927, p. 295). In standardizing paper, Die Brücke also believed it was improving the efficiency of the modern office worker: "A volunteer and avid skier organized the entire German ski club in such a way that all its announcements were printed in the World Format. This centralized its operations, brought considerable savings, and integrated its work. It was splendidly successful" (Ostwald, 1927, p. 304). The group believed that through paper it could help *standardize* standardization more generally:

Paper dimensions will be unified through the general introduction of universal formats. This will lead to the greater conservation of paper materials, cards, etc. Also the consequences of this unification for other areas must not be overlooked: office furniture, packaging, picture frames, indeed the consequences for engineers and architects for example. . . . (Bührer and Saager, 1911, p. 135)

The idea was that unlike the book, the Mono System would allow for the juxtaposition or collaging of different thoughts by the user, thus stimulating increased levels of participation. Because Monos are expendable, knowledge about the world will grow more quickly. Because Monos are designed for portability, they are also easier to circulate: "It must be able to be stuck into one's pocket without being damaged" (Bührer and Saager, 1911, p. 125). So sure were they of the efficacy of the Mono System generally and the World Format specifically that they went so far as to liken its importance to that of moveable type:

Just as Gutenberg broke down the rigid wooden writing blocks and turned them into individual pieces with which humanity could pursue its ingenious games, so also has the idea of the monograph enabled thoughts and works of the mind to become no less flexible and agile. (Bührer and Saager, 1911, p. 122)

Needless to say, the revolution that the Mono System promised did not come to pass in the way that members of Die Brücke had hoped. By Ostwald's account, Die Brücke suffered from internal strife and misunderstanding from the very beginning. He considered Bührer's understanding of the energetic imperative to be misguided: "For me the absence of waste (*Restlosigkeit*) consists in having nothing in our external or internal experience that is not accessible through scientific inquiry. The authors of the book on Die Brücke (i.e., *Die Organisierung der geistigen Arbeit durch 'Die Brücke'*), however, understood this concept in a profoundly different way" (Ostwald, 1927, p. 291). Ostwald was also of the opinion that the Mono System had been put to use in ill-conceived ways, particularly by its originator:

As a model for an organizational undertaking, Bührer prepared a complete collection of all postcards of a city (he chose Ansbach), and I could only stop it by firmly intervening at the last moment when I rightly saw that it would make Die Brücke look ridiculous. This was an effect of the misguided understanding of *Restlosigkeit*.

In lieu of postcards, Bührer subsequently selected a massively extensive collection of advertisements gathered together by children, which he acquired from all different places and glued together in World Formats. At first he carried out this work alone, but then, as I belatedly learned, he brought in Die Brücke's personnel because he could not otherwise manage the countless thousands of crinkly materials. (1927, pp. 303–304)

Despite these criticisms, one could say with the benefit of hindsight that there were ways in which the Mono System proved prescient, and in what follows I want to discuss two of them.

First, Die Brücke rightly grasped that knowledge could be treated as a proprietary good under global capitalism. The information age was still in its infancy at the time the group was formed, and trade was still largely

a domestic matter. Nevertheless, Die Brücke had the foresight to understand how one might transform knowledge into a globally exchangeable fungible good. Their Monos—which we might also think of as “physical thoughts”—fundamentally blurred the distinction between commerce and disinterested scientific inquiry. They also left behind a framework for quantifying *geistige Arbeit*—for literally measuring, counting, and even pricing the value of our mental energies (for good or bad).

Second, one must also acknowledge the significance of Die Brücke’s World Format. The World Format was unique in its association with the machinery of globalization, which had matured considerably during the course of the nineteenth century. The World Format was conceived during a period in which metric units had gained wide currency throughout Europe, thus enabling commodity markets to grow exponentially. World’s fairs helped build a global market for private manufacturers. The locomotive increased tourism and accelerated the circulation of goods. The advent of the cinema helped create a global mass culture. Capitalism produced a mass body of nonphysical laborers known as office workers. All of these developments allowed manufacturers to expand by exploiting the economies of scale. There also resulted strong pressures for the widespread adoption of common administrative and technical norms or standards (Braman, 1996; Mattelart, 1999). Die Brücke introduced both the Mono System and the World Format to exploit these and other new realities. In Ostwald’s words, Die Brücke’s goal was precisely to create *das Gehirn der Welt*, “the brain of the world” (1912, pp. 241–245), but also with broadened visibility and the capacity to exploit the new opportunities that modern capitalism had produced.

Admittedly, Die Brücke never profited (financially or otherwise) from its innovations, for it went bankrupt before it could (Ostwald, 1927, p. 304). Still, others later did draw on its ideas, and one of these was the German engineer Walter Porstmann (1886–1959). Porstmann’s personal ties to Die Brücke were legion, and they have been detailed by Markus Krajewski (2006, pp. 120–131; 2011). It is widely known that he developed the A-Series paper formats, which were modeled after the World Format. Probably less well-known, however—although equally important perhaps—is the fact that he also spent much of his career from the 1920s onwards designing office systems. Through Fabriknorm G.m.b.H., a company he began in the 1920s, Porstmann made desks, chairs, folders, binders, filing systems, and other products. All of them were expressly made with the dimensions of the A-Series formats (1:√2 proportion throughout) in mind. Porstmann clearly recognized that the standard sheet of paper invited the development of standards for other products. He spent much of his professional life trying to exploit this demand for his own commercial gain. The hanging filing drawer is his best-known innovation in this context and it is of course still in circulation today.

The following passage excerpted from one of Fabriknorm's early sales catalogs illustrates Porstmann's keen grasp of the power of standardized paper. It should be seen as a significant part of Die Brücke's historical legacy. It describes the "power of paper" in terms that strongly recall some of the ideas of Die Brücke.

In the office anything and everything depends on the dimensions of outgoing, incoming, processed and collected pieces of paper, that is to say, on the format. It was a good move for DIN (*Deutsche Normenausschuß*) to replace all the overly large varieties of paper formats with the standard formats. With that the foundation of the standardization of the office became possible. (Porstmann, 1928, p. 1)

A second important "successor" to Die Brücke is DIN itself. DIN is Germany's foremost standards-issuing organization. It is one of the three most important standards organizations created in the last century. Formed in 1917, it enjoyed close professional ties with Porstmann, who was in its employ for roughly three years. Early on, it adopted two marketing strategies that could well have derived directly from Die Brücke's founding manifesto of 1911. The first and perhaps most obvious relates to DIN's strategic use of standardized paper formats: essentially, its usage of standardized sheets of paper helped publicize its name. Prior to the publication of DIN 476, which details the principles behind the A-Series formats, DIN was relatively unknown as a company. After 1922 when DIN 476 entered the market, however, all of that changed. Standard paper formats introduced DIN—and standards generally—into the lives of people who were otherwise oblivious to its activities. This not only elevated DIN's prestige and reputation, it also transformed it into a globally recognized brand. Today, its standards are virtually synonymous with DIN A4, the World Format's most famous offspring. One could even say that it is *overidentified* with the paper standards that made it famous. Indeed, in one of DIN's latest promotional campaigns there is a slogan that reads "DIN—Mehr als DIN A4."

There are also uncanny similarities between the so-called *DIN Blatt* and the Die Brücke's Mono. Like the Mono, all of DIN's standards are published on leaflets or individual sheets of paper, at least they were through the early 1960s. All DIN standards are reviewed regularly and revised where necessary. They are also proprietary and are usually purchased individually. The *DIN-Blätter* adhere to strict typographical and formatting rules to assure consistency. They are also ordered numerically, which is in keeping with the Dewey Decimal System. Boxes frame individual pieces of information on each page, just as they do for Monos. Seen together, the *DIN-Blätter* read like entries in a giant, open-ended encyclopedia, just as had been intended with the Monos. Information about a given standard's name, subject matter, date of release, and filing number are clearly listed. Contact information is included as well. Individual DIN standards are written succinctly to save time; they are portable enough to fold and carry

in one's pocket. They aptly convey its mission, which (like Die Brücke) has always been tied to principles of *Restlosigkeit*.

These are essentially preliminary observations in that a study that rigorously compares Die Brücke to DIN or Fabriknorm G.m.b.H. has yet to be written. Nevertheless, they do raise important questions. First, what were some of the specific interpersonal links between DIN and Die Brücke—apart from the ones we already know about—and how might they help us rethink the history of the organization of knowledge as a whole? Is it not the case that DIN was a knowledge-building organization? How might this recognition help us rethinking its history anew?

There are other more general questions that need to be posed: what is the discursive difference between *Organisierung* (organization), which is a word Die Brücke frequently invokes, and *Normierung* (standardization), which it does not? Why is it that the latter hardly surfaces in Die Brücke's writings despite its clear significance to its philosophy and world view? How might we historicize further Die Brücke's use of the term *geistige Arbeit*? To what extent was it already a familiar concept at the start of the twentieth century, or did it represent something new? (I am inclined to believe the latter, but for circumstantial reasons alone.) Finally, are there useful historiographical consequences in interpreting Die Brücke along the lines offered here?

As I have attempted to show, what the study of Die Brücke offers us is not just an entry point into the early history of the information society but something more subtle and considerable: a lens onto the complex and often conflicted ambitions that defined engagements between science and the "science of knowledge" at the start of the twentieth century. Die Brücke's dream of organizing *geistige Arbeit* stood at the very epicenter of these tensions, and we need to continue to regard both the Mono System and its progeny, the *Weltformat*, as two distinct answers to the political, economic, and social questions that it ultimately raised.

NOTE

1. All translations in this article are by the author

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